

WHAT IS CLAIMED IS

Claim 1 A ceramic structure for forming a piezoelectric ceramic element for power generation comprising a composite formed of a blended mixture of ceramic particles and heat resistant fibers with said heat resistant fibers possessing a sintering temperature and tensile strength higher than that possessed by the ceramic particles in the composite.

Claim 2 A ceramic structure for forming a piezoelectric ceramic element for power generation as defined in claim 1 wherein said fibers are ceramic fibers having insulating properties.

Claim 3 A ceramic structure for forming a piezoelectric ceramic element for power generation as defined in claim 1 wherein the ceramic particles are in powdered form and the fibers are of a length equal to between 3 to 10 times the average diameter of the ceramic powdered particles.

Claim 4 A ceramic structure for forming a piezoelectric ceramic element for power generation as defined in claim 1 wherein the ceramic fibers are intermixed with the ceramic particles in a volumetric ratio of ceramic fibers to ceramic particles of 3% to 20%.

Claim 5 A ceramic structure for forming a piezoelectric ceramic element for power generation as defined in claim 3 wherein the ceramic fibers are intermixed with the ceramic particles in a volumetric ratio of ceramic fibers to ceramic particles of 3% to 20%.

Claim 6 A ceramic structure for forming a piezoelectric ceramic element for power generation as defined in claim 3 wherein the heat resistant fibers function as insulators.

Claim 7 A ceramic structure for forming a piezoelectric ceramic element for power generation as defined in claim 6 further comprising additional fibers which are conductive fibers with the fibers intermixed to efficiently yield electrical energy inside said ceramic structure as mechanical stresses induce distortion of the piezoelectric ceramic element.

Claim 8 A ceramic structure for forming a piezoelectric ceramic element for power generation as defined in claim 7 wherein said conductive fibers are composed of carbon.

Claim 9 A method for forming a piezoelectric ceramic element for power generation comprising the steps of forming a blended mixture of ceramic particles and heat resistant fibers with the heat resistant fibers possessing a sintering temperature and tensile strength higher than that possessed by the ceramic particles in the composite.